

SAN JOSE TO MERCED PROJECT SECTION PREFERRED ALTERNATIVE

Board of Directors Meeting, Agenda Item #3
Tuesday, September 17, 2019
San Jose, CA



SAN JOSE TO MERCED PROJECT SECTION

Staff-Recommended Preferred Alternative, Board of Directors Meeting

TODAY'S PROPOSED BOARD ACTION

- Concur with the staff recommendation to identify Alternative 4 as the Preferred Alternative for the San Jose to Central Valley Wye project extent in the San Jose to Merced Project Section Draft EIR/EIS
 - » Identifying a preferred alternative aligns with federal law, including MAP-21 (2012) and FAST Act (2015), and with the CEQA requirement for a proposed project
 - » This process is consistent with the Authority's guidance
 - » Identifying a preferred alternative in the Draft EIR/EIS allows the public and agencies to focus their review
 - » All alternatives will be analyzed at an equal level of detail and described in the published Draft EIR/EIS
 - » Identifying the Preferred Alternative does not constitute the adoption or approval of a preferred alternative



PREFERRED ALTERNATIVE PROCESS

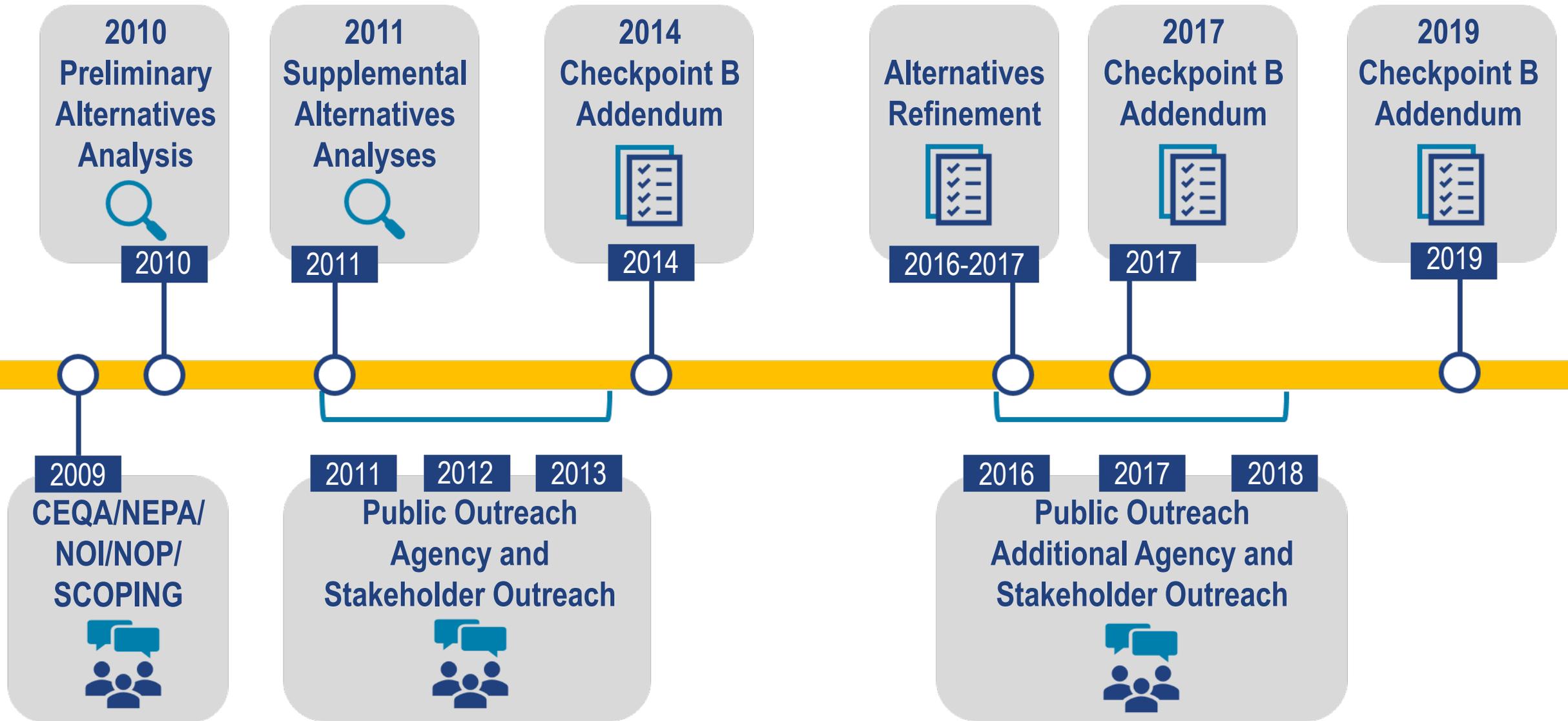


PREFERRED ALTERNATIVE

REFINING THE ALTERNATIVES

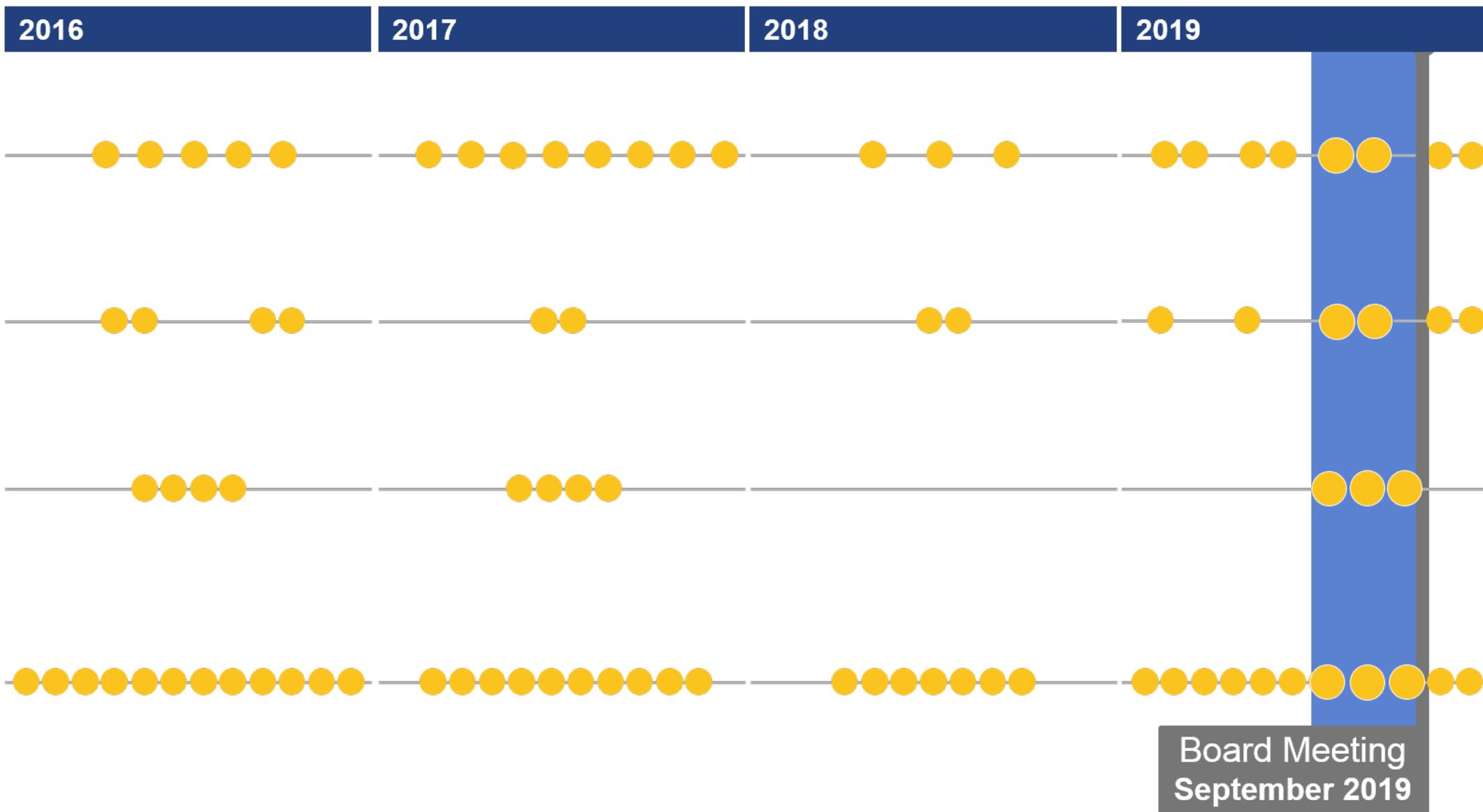


PROJECT ALTERNATIVES DEVELOPMENT PROCESS



SAN JOSE TO MERCED COMMUNITY OUTREACH

2016 – 2019



INTERFACING WITH NORTHERN CALIFORNIA AGENCIES

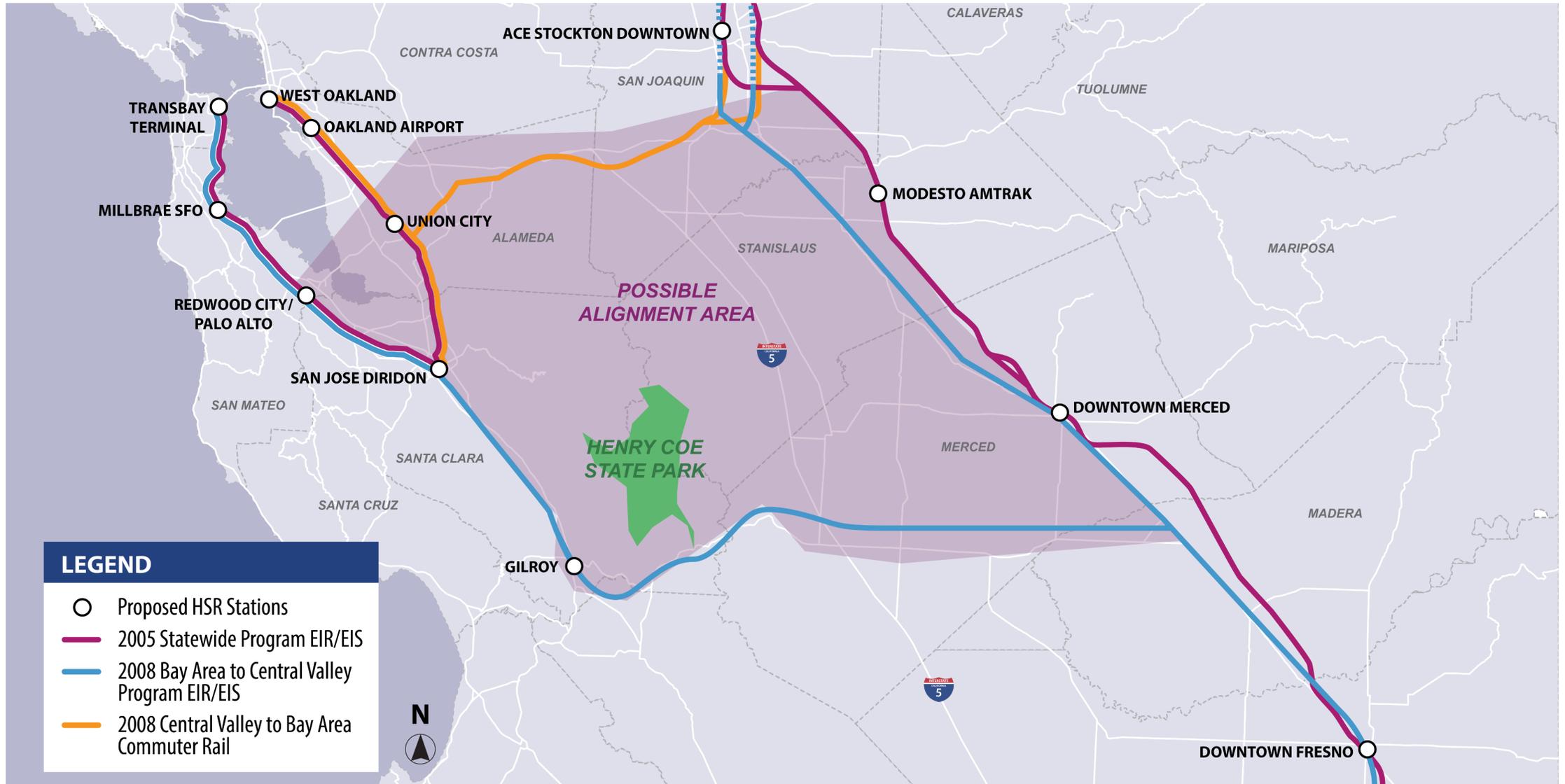
2018 – 2019

● = coordination with agency on topic

AGENCY	ALIGNMENTS	WATER MANAGEMENT	WILDLIFE CROSSINGS	TRANSPORTATION/ ROADS	ENGINEERING/ DESIGN	LAND USE	JOINT OUTREACH	2018 BUSINESS PLAN
California Highway Patrol	●			●				●
California Strategic Growth Council	●		●		●	●	●	●
Caltrain	●			●	●		●	●
Caltrans Districts 4, 5, and 10	●			●	●			●
Cities of Gilroy, Morgan Hill, and San Jose	●	●		●	●	●	●	●
Floodplain Administrators and Managers	●	●			●			●
Gilroy, Los Banos & Morgan Hill USDs	●			●	●	●	●	●
Grasslands Ecological Area Stakeholders Group	●	●	●		●	●		●
Metropolitan Transportation Commission	●			●		●		●
Mineta San Jose International Airport	●				●			●
Pathways for Wildlife	●		●					●
Peninsula Open Space Trust	●		●					●
San Benito County Resource Mgmt. Agency	●	●			●			●
Santa Clara County Parks	●	●	●			●		●
Santa Clara County Planning Department	●	●			●			●
Santa Clara County Roads & Airports	●			●				●
Santa Clara Valley Habitat Agency	●		●		●	●		●
Santa Clara Valley Open Space Authority	●	●	●					●
Santa Clara Valley Transportation Authority	●		●	●	●	●	●	●
Santa Clara Valley Water District	●	●			●			●
The Nature Conservancy	●	●	●			●		●

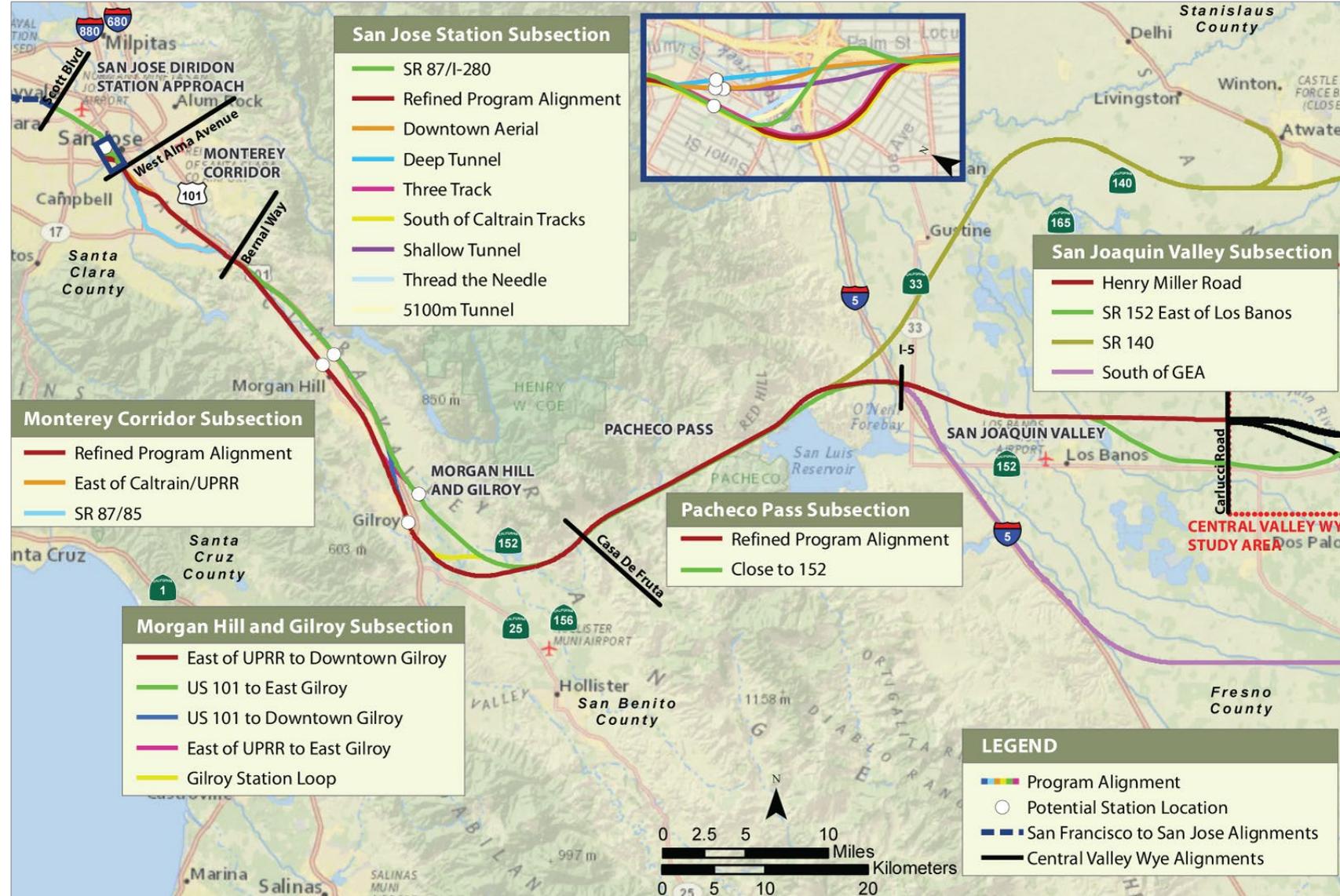


2005 AND 2008 CORRIDOR SELECTION



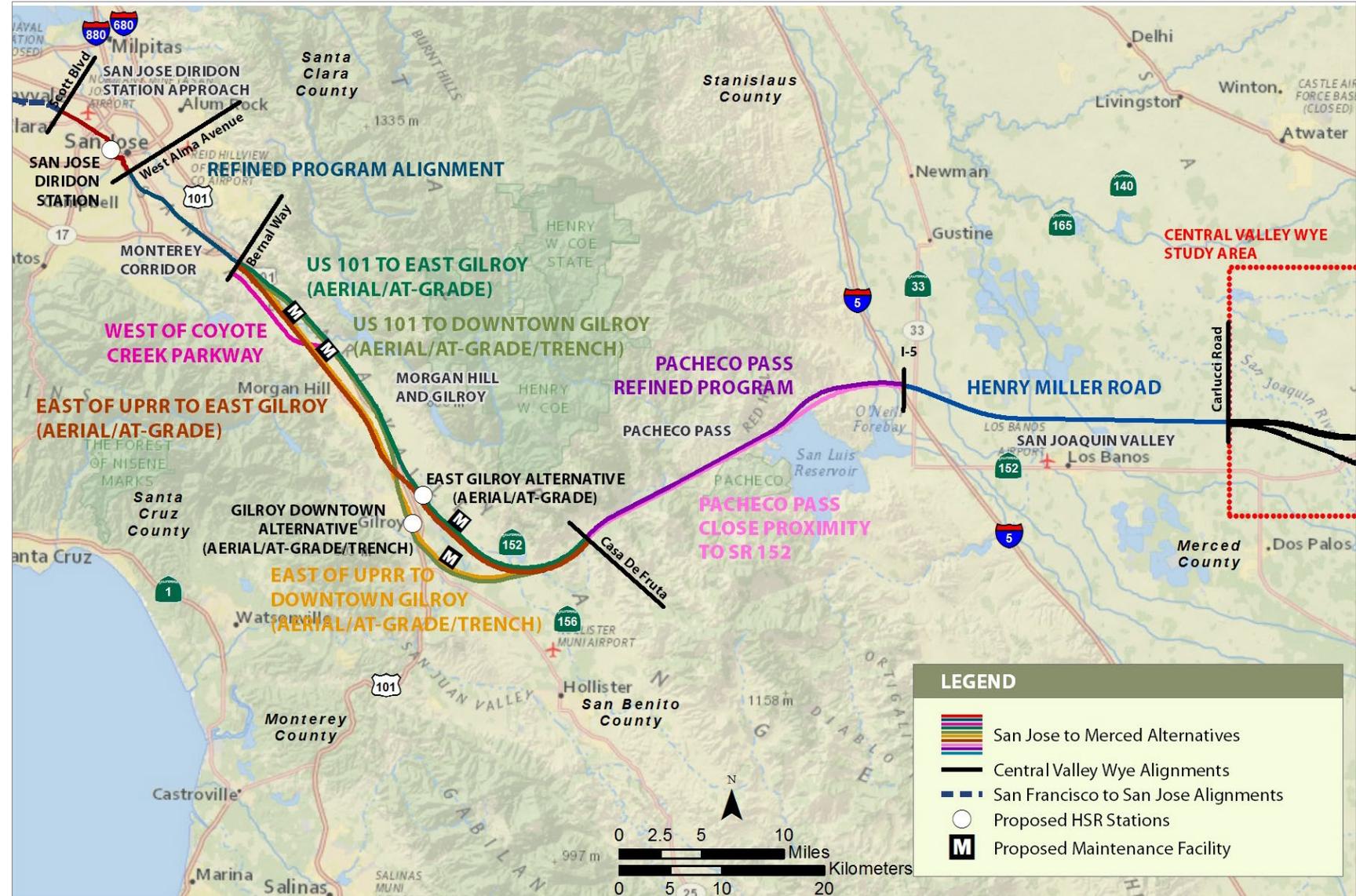
ALTERNATIVES DEVELOPMENT: 2009 - 2010

- Public scoping range of alternatives
- Evaluated in Preliminary Alternatives Analysis (2010)



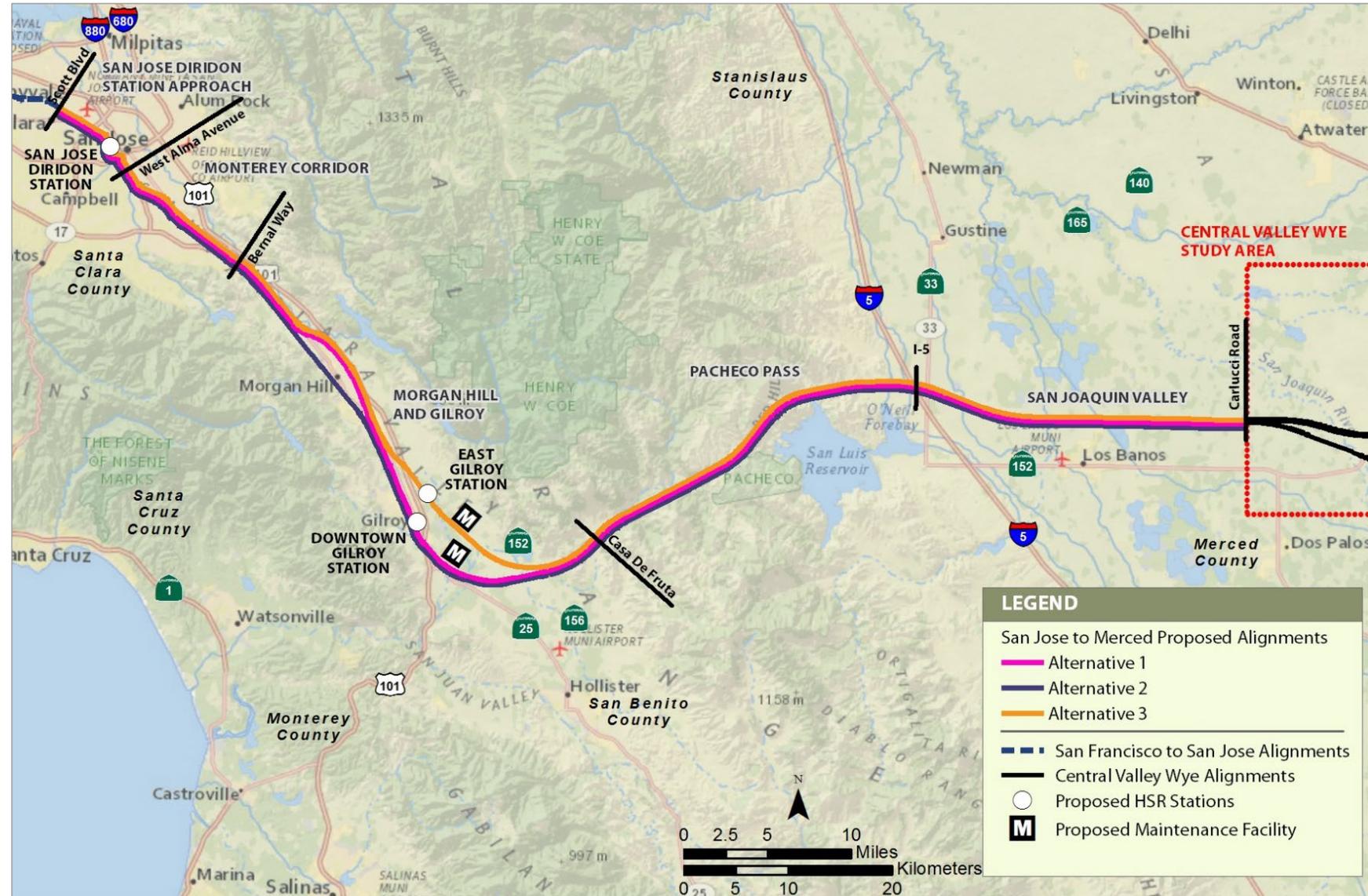
ALTERNATIVES DEVELOPMENT: 2011 - 2012

- Range of alternatives after stakeholder input, Preliminary and Supplemental Alternatives Analyses



ALTERNATIVES DEVELOPMENT: 2016 - 2017

- 3 dedicated, grade-separated end-to-end alternatives were developed in response to 2016 Business Plan and ongoing outreach during 2017



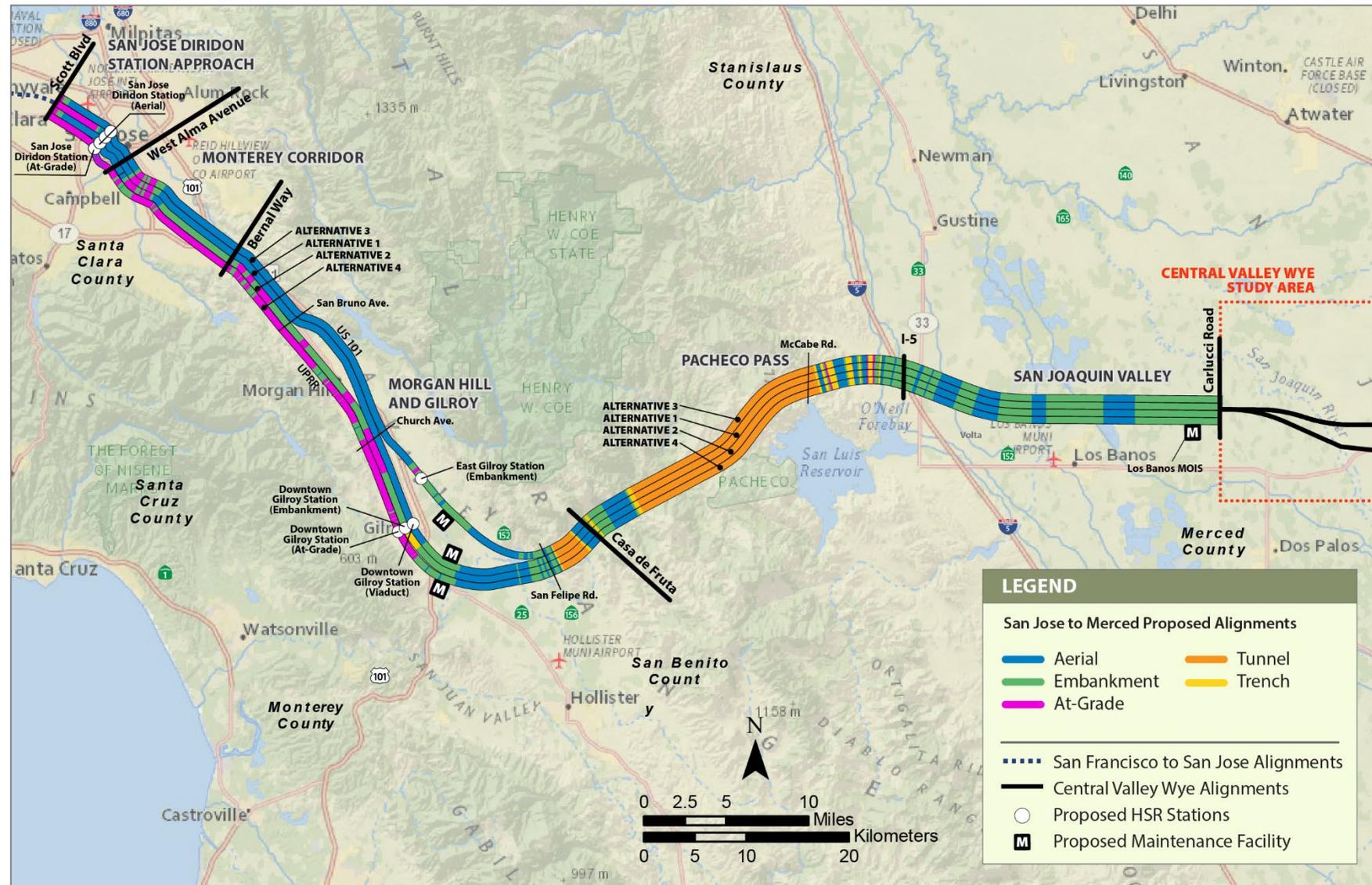
PREFERRED ALTERNATIVE

CHARACTERISTICS OF ALTERNATIVES



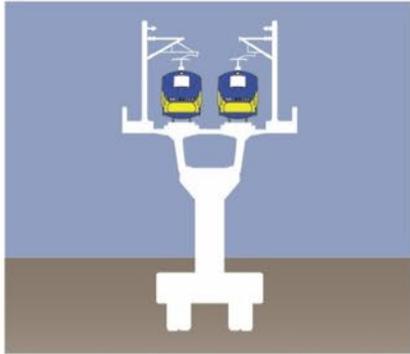
SAN JOSE TO MERCED RANGE OF ALTERNATIVES

- San Jose to Merced Project Section
- 4 end-to-end alternatives
- Some alternatives are the same for a part of the route



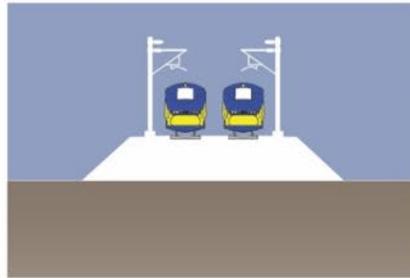
TYPICAL CROSS SECTIONS

Viaduct



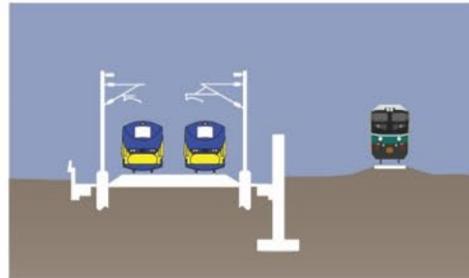
Two high-speed rail tracks on an aerial structure

Embankment



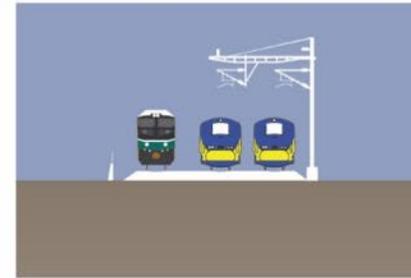
Two high-speed rail tracks on an earthen embankment

Dedicated At-Grade



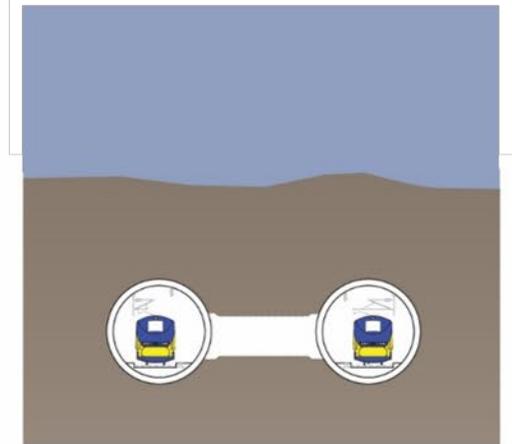
Two high-speed rail tracks at ground level adjacent to existing freight tracks

Blended At-Grade



Two electrified, blended passenger tracks (with Caltrain) and one non-electrified freight track at ground level

Tunnel



Twin bore tunnel through the Pacheco Pass

SAN JOSE DIRIDON STATION APPROACH

- **Alternative 1**
 - » Short Viaduct to I-880
 - » Aerial Diridon Station
- **Alternatives 2 and 3**
 - » Long Viaduct to Scott Blvd.
 - » Aerial Diridon Station
- **Alternative 4**
 - » At-grade alignment predominantly in existing railroad right-of-way
 - » At-grade Diridon Station



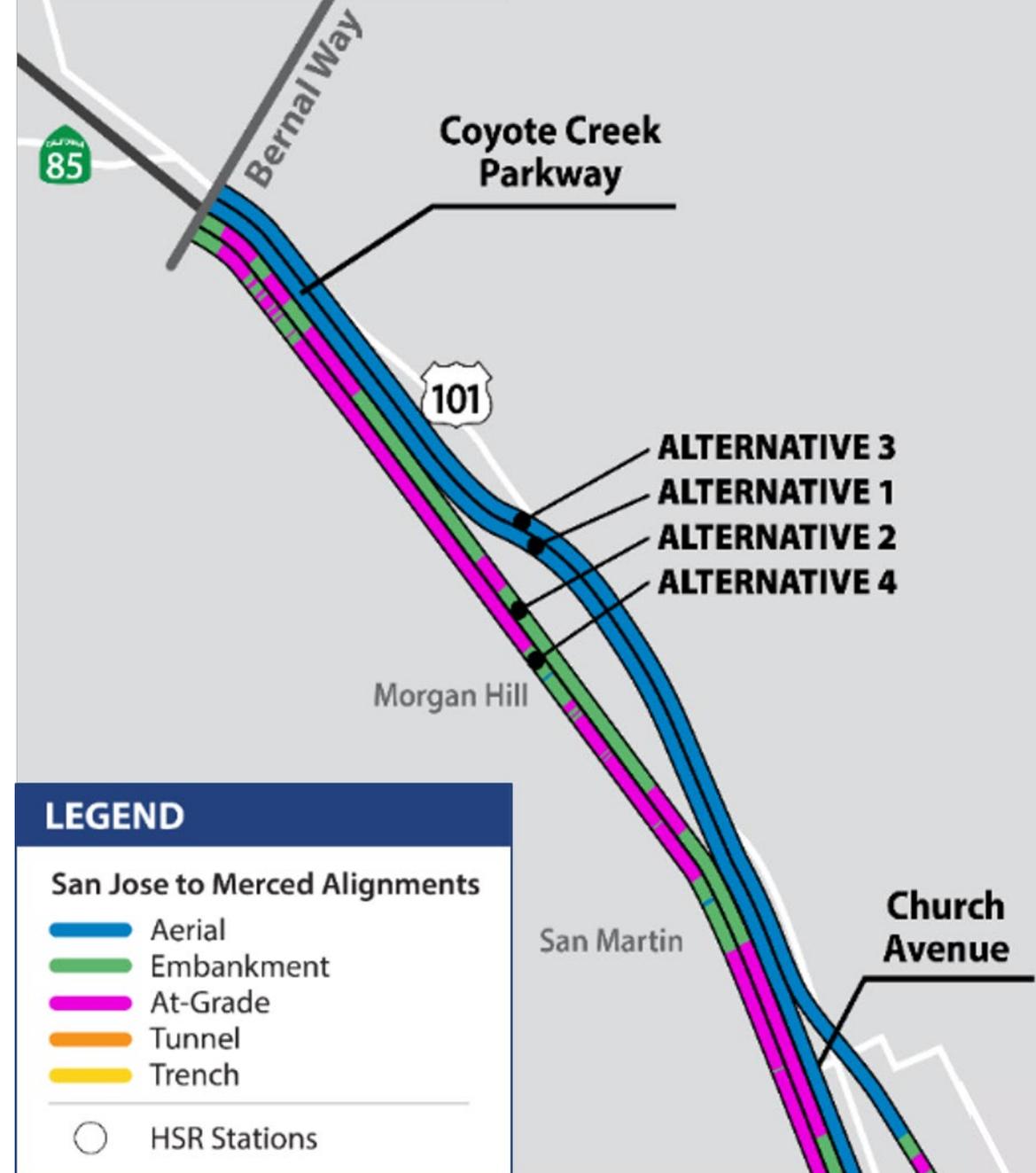
MONTEREY CORRIDOR

- **Alternatives 1 and 3**
 - » Viaduct in median of Monterey Road
 - » Narrowing of Monterey Road
- **Alternative 2**
 - » Grade-separated embankment between UPRR and Monterey Road
 - » Narrowing of Monterey Road
- **Alternative 4**
 - » At-grade predominantly in existing railroad right-of-way



MORGAN HILL TO SAN MARTIN

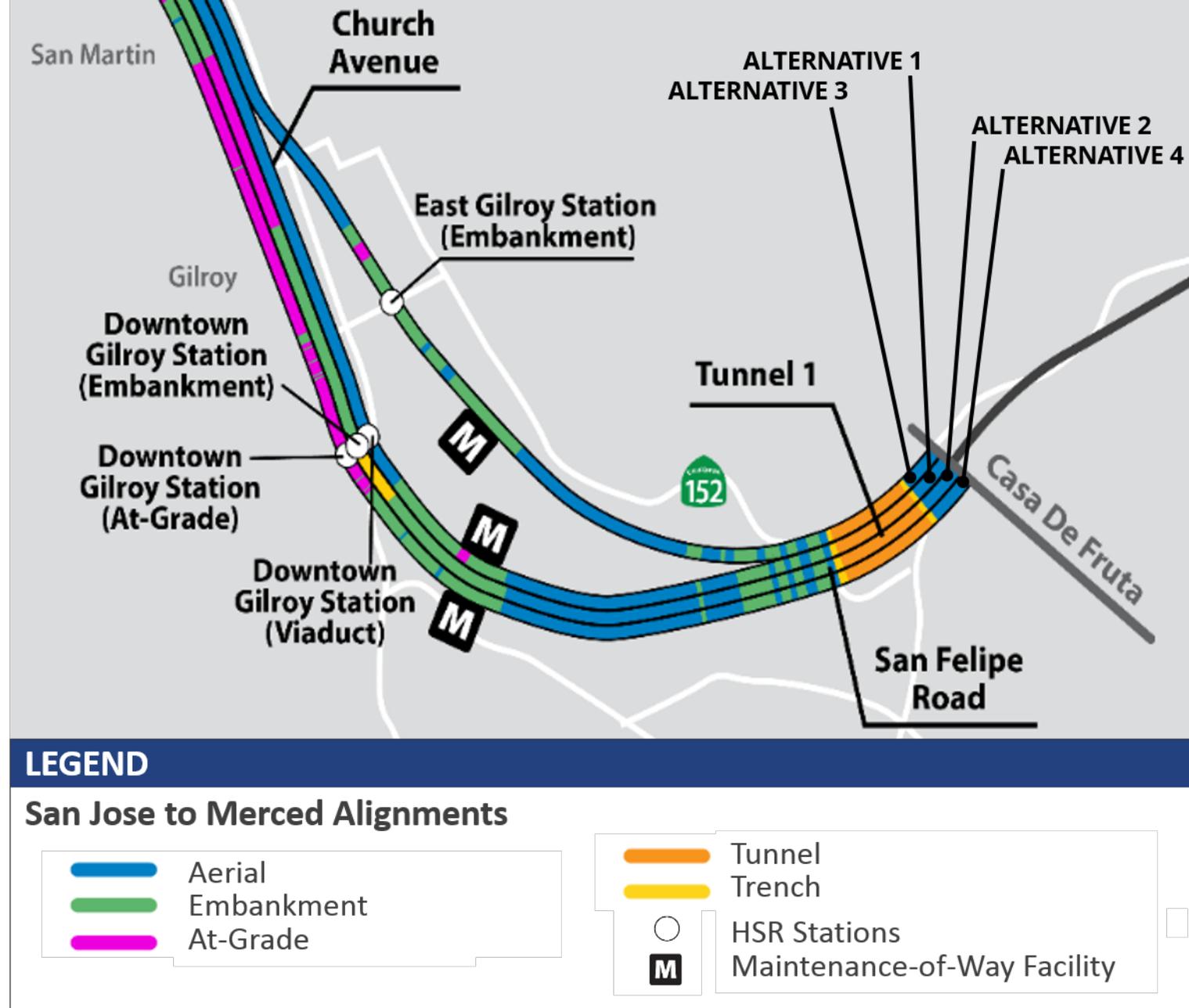
- **Alternatives 1 and 3**
 - » Viaduct
 - » Bypass downtown Morgan Hill
- **Alternative 2**
 - » Grade-separated embankment
 - » Through downtown Morgan Hill
- **Alternative 4**
 - » At grade
 - » Predominantly in existing UPRR right-of-way



SAN MARTIN TO GILROY

- **Alternative 1 – Downtown Gilroy**
 - » Viaduct
- **Alternative 2 – Downtown Gilroy**
 - » Grade-separated embankment
- **Alternative 3 – East Gilroy**
 - » Viaduct to grade-separated embankment
- **Alternative 4 – Downtown Gilroy**
 - » At grade
 - » Predominantly in existing UPRR right-of-way

Alternatives converge at 1.6-mile Tunnel 1 west of Casa De Fruta



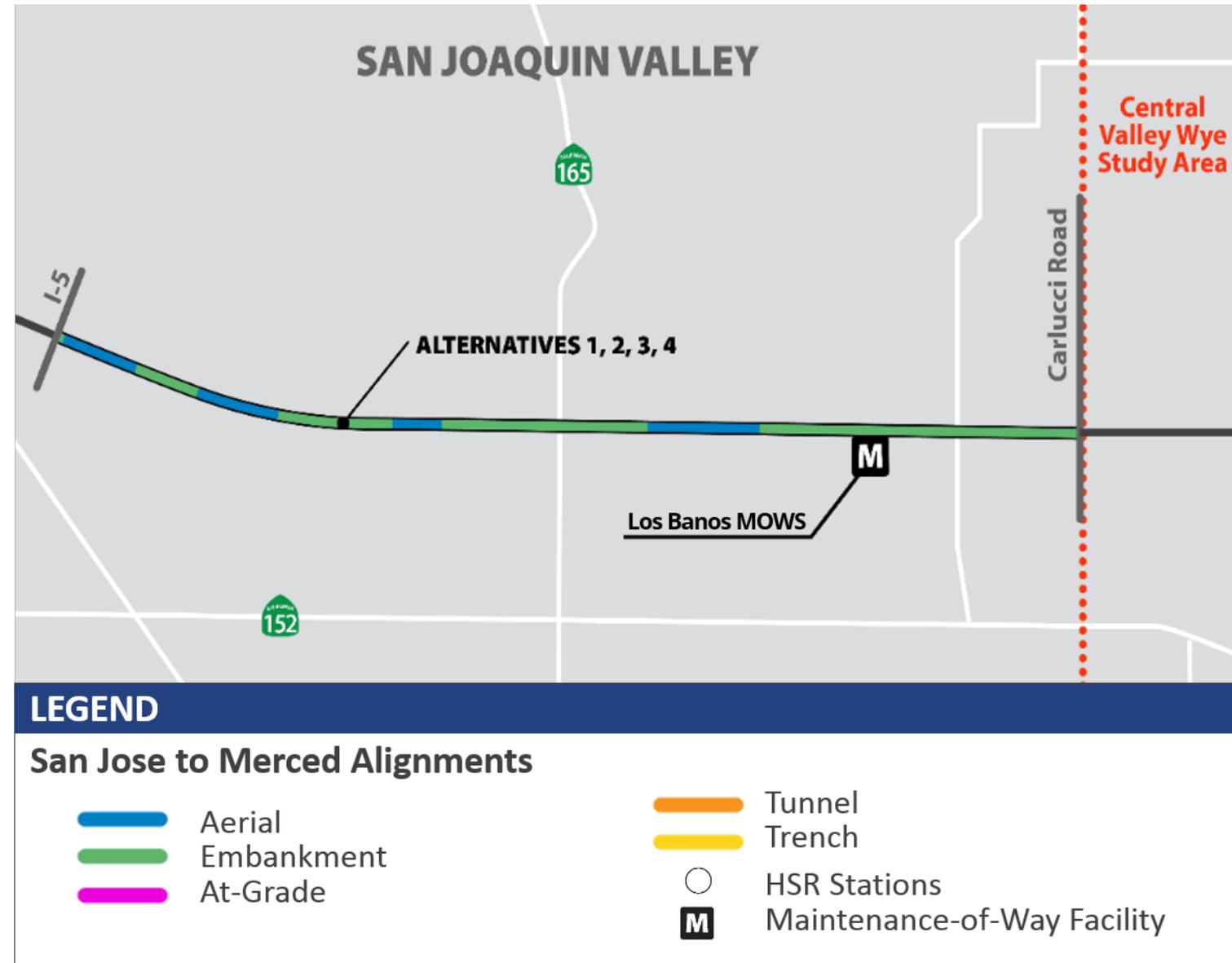
PACHECO PASS

- All alternatives have the same alignment
 - » 13.5-mile Tunnel
 - » Embankment
 - » Viaduct



SAN JOAQUIN VALLEY

- All alternatives have the same alignment
 - » Embankment
 - » Viaduct
- Elevated guideway across the Grasslands Ecological Area per the Programmatic EIR/EIS
 - » Preliminary design and impact analyses developed in consultation with stakeholders
 - » Impacts and mitigation measures will be described in the Draft EIR/EIS



PREFERRED ALTERNATIVE

IDENTIFYING A PREFERRED ALTERNATIVE



ENVIRONMENTAL AND COMMUNITY FACTORS – RESOURCES AND ISSUES IN DRAFT EIR/EIS

- Aesthetics and Visual Quality
- Agricultural Lands
- Air Quality and Global Climate Change
- Biological and Aquatic Resources
- Built Environment Historic Resources
- Displacements
- Electromagnetic Fields and Electromagnetic Interference
- Emergency Vehicle Access/Response Time
- Environmental Justice
- Geology, Soils, Seismicity, and Paleontological Resources
- Hazardous Materials and Waste
- Hydrology and Water Resources
- Land Use and Development
- Noise and Vibration
- Parks and Recreation
- Public Utilities and Energy
- Regional Growth
- Transportation

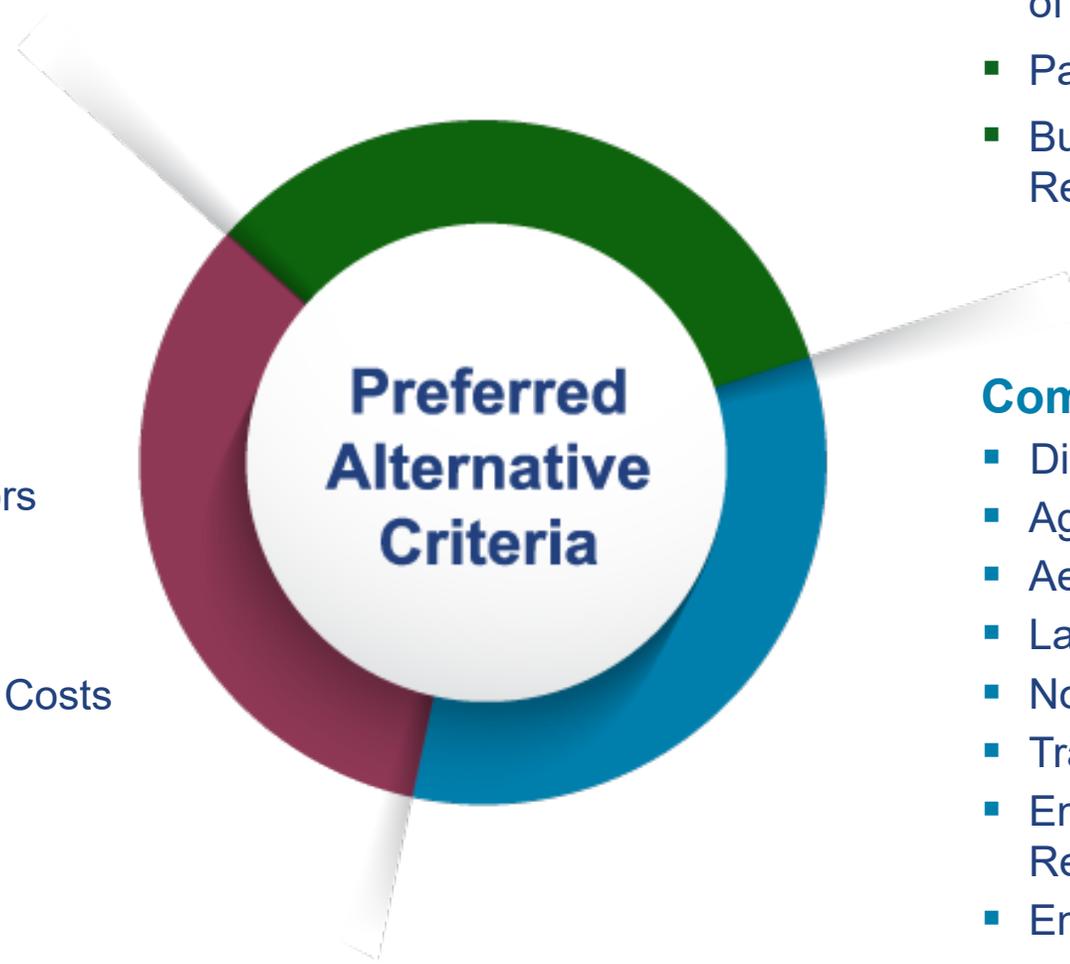
ENVIRONMENTAL AND COMMUNITY FACTORS – DIFFERENTIATORS

- Aesthetics and Visual Quality
- Agricultural Lands
- Biological and Aquatic Resources
- Built Environment Historic Resources
- Displacements
- Emergency Vehicle Access/Response Time
- Environmental Justice
- Hydrology and Water Resources
- Land Use and Development
- Noise and Vibration
- Parks and Recreation
- Transportation

PREFERRED ALTERNATIVE CRITERIA

System Performance, Operations, & Costs

- Alignment Length
- Operational Speed
- Proximity to Transit Corridors
- Travel Time
- Capital Costs
- Operations & Maintenance Costs



Environmental Factors

- Biological Resources and Wetlands and Other Waters of the U.S.
- Parks and Recreation Areas
- Built Environment Historic Resources

Community Factors

- Displacements
- Agricultural Lands
- Aesthetics and Visual Quality
- Land Use and Development
- Noise
- Transportation
- Emergency Vehicle Access/Response Time
- Environmental Justice

BOARD MEMO – TECHNICAL ANALYSIS

BRIEFING: SEPTEMBER 17, 2019 BOARD MEETING

TO: Chairman Mendonca and Board Members

FROM: Boris Liplin, Northern California Regional Director
Mark McLoughlin, Director of Environmental Services

DATE: September 17, 2019

RE: Consider Concurring with the Staff Recommended Preferred Alternative for the San Jose to Central Valley Wye Project Extent for Identification in the San Jose to Merced Project Section Draft EIR/EIS

Summary of Recommended Action

California High-Speed Rail Authority (Authority) staff recommends that the Board of Directors (Board), acting in its capacity as the state lead agency under the California Environmental Quality Act (CEQA) and the federal lead agency under the National Environmental Policy Act (NEPA) pursuant to NEPA assignment,¹ identify Alternative 4 as the Preferred Alternative for the San Jose to Central Valley Wye project extent in the San Jose to Merced Project Section Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS). Staff's recommendation is based on the preliminary engineering, environmental impact analysis, and extensive public, stakeholder, and agency input received to date.

Upon receiving the Board's concurrence, Alternative 4 will be identified as the Preferred Alternative in the Draft EIR/EIS. Identification of the Preferred Alternative and Board concurrence is neither an approval or a final decision. The Authority may change the Preferred Alternative after receiving comments during public and agency review of the Draft EIR/EIS. The Authority anticipates publishing the Draft EIR/EIS in Spring 2020 for public and agency review and comment. Staff will consider and respond to those comments while developing the Final EIR/EIS and, subsequently, staff will return to the Board to request final project approval.

Background

The 2005 Tier 1 California High-Speed Train Final Program EIR/EIS deferred selection of a corridor between the San Francisco Bay Area and Central Valley until completion of a second, more focused Program EIR/EIS. The 2008 Bay Area to Central Valley Program EIR/EIS evaluated two network alternatives for linking the Bay Area and Central Valley—the Pacheco Pass and the Altamont Pass—and four alignment alternatives between San Francisco and San Jose. The Authority and Federal Railroad Administration (FRA) selected the Pacheco Pass network alternative and identified a corridor from San Jose south to Gilroy, and then east through Pacheco Pass to the Central Valley to advance for further study in a Tier 2 (project-level) EIR/EIS. These decisions were reconfirmed, following litigation, by the 2010 Bay Area to Central Valley High-Speed Train Revised Final Program EIR and the 2012 Bay Area to Central Valley High-Speed Train Partially Revised Final Program EIR (Authority 2012a).

¹ Effective July 23, 2019, the FRA assigned its NEPA federal lead agency responsibilities for the high-speed rail project to the State of California, acting through the State Transportation Agency and the Authority, pursuant to 23 U.S.C. 317 and a Memorandum of Understanding effective July 23, 2019.



Systems Performance, Operations, and Capital Costs

The key differentiators are operational speed between San Jose and Gilroy; proximity to transit corridors; peak hour average representative travel time; and capital costs. The lower operational speed of blended service within the Caltrans and UPRR rights of way between San Jose and Gilroy would have peak hour average representative travel times up to 6 minutes longer than the dedicated alignments under Alternatives 1, 2, and 3. However, Alternative 4 has lower capital costs than the other three alternatives. Alternatives 2 and 4 would follow existing transportation corridors more closely than Alternative 1 (because of the Morgan Hill Bypass) and Alternative 3 (because of the San Joaquin Valley, and operations and maintenance costs would not differ substantially between the four alternatives.

Considering capital cost differences, Alternative 4 is approximately \$4 billion less than Alternative 2 and approximately \$7 billion less than Alternatives 1 and 3. Capital cost estimates were developed by utilizing recent bid data from large transportation projects in the western United States and used bottom-up unit pricing to reflect common high-speed rail elements and construction methods with an adjustment for Bay Area labor and material costs. All material quantities for the project alternatives are based on the Authority's preliminary 15-percent-complete design standard. The capital costs reflect a conservative scope and sufficient project footprint to accommodate project refinements and mitigation through final design for construction documents. This allows the Authority to evaluate worst-case maximum impacts in the Draft EIR/EIS and reduces the risk that environmental clearance does not cover all potential impacts.

Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Alignment length (miles)	89	89	87	89
Operational Speed (mph)—San Jose to Gilroy	Up to 175	Up to 195	Up to 175	Up to 110
Operational Speed (mph)—Gilroy to Central Valley Wye	Up to 220			
Proximity to transit corridors (miles)	43	50	35	50
Peak hour average representative travel time between San Jose and Gilroy (minutes)	17-18	17-18	16-17	23
Proposition 1A Service Travel Time Compliance	Yes	Yes	Yes	Yes
Estimated capital costs (2017\$ billions) ²	\$20.5	\$17.7	\$20.8	\$13.6
Estimated annual operations and maintenance costs (2017\$ millions) ²	\$162			

Community Factors

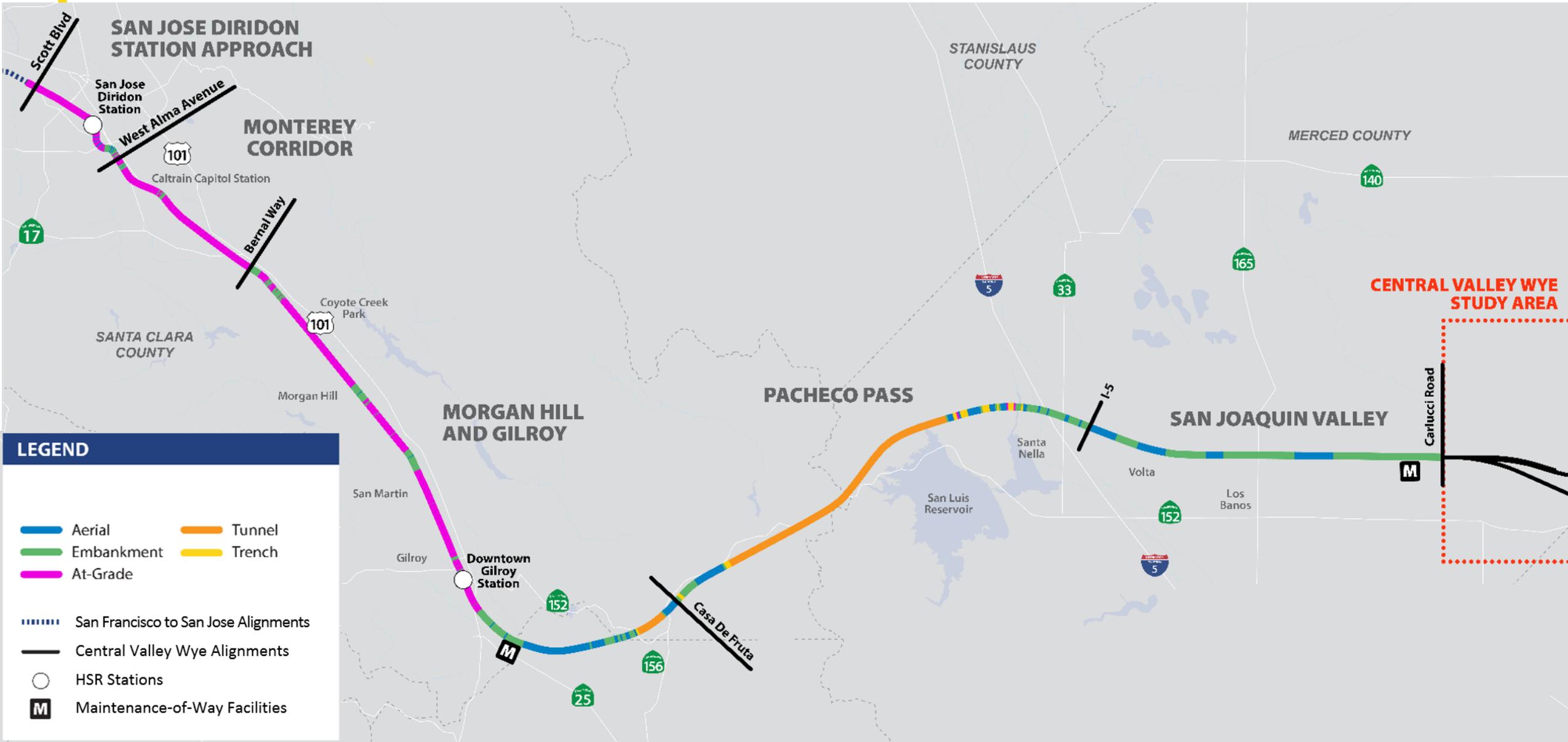
The key differences in community factor outcomes result from placing the high-speed rail alignment predominantly within the existing Caltrans and UPRR rights of way or in a new dedicated high-speed rail corridor between San Jose and Gilroy. Alternative 4 would result in the fewest overall permanent displacements of residential units, businesses, agricultural structures, and community or public facilities when compared to Alternatives 1, 2, and 3. Alternative 4 would also result in the fewest permanent conversions of Important Farmland compared to the other alternatives. Alternative 4 would result in the fewest visual impacts and the fewest permanent road closures.

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For further information, visit the California High-Speed Rail Authority web site at <http://www.hsr.ca.gov/>

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ALTERNATIVE 4 – Staff-Recommended Preferred Alternative



LEGEND

- Aerial
- Embankment
- At-Grade
- Tunnel
- Trench
- ⋯ San Francisco to San Jose Alignments
- Central Valley Wye Alignments
- HSR Stations
- M Maintenance-of-Way Facilities

SUMMARY OF ALTERNATIVES EVALUATION – SYSTEM PERFORMANCE, OPERATIONS, & COSTS



● Best-performing alternative

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Alignment length			●	
Operational Speed — San Jose to Gilroy		●		
Operational Speed — Gilroy to Central Valley Wye	<i>No difference</i>			
Proximity to existing transit corridors		●		●
Travel time — San Jose and Gilroy			●	
Proposition 1A service travel time compliance	✓	✓	✓	✓
Estimated capital costs				●
Estimated annual operations and maintenance costs	<i>No difference</i>			

SUMMARY OF ALTERNATIVES EVALUATION – COMMUNITY FACTORS



● Best-performing alternative (fewest/least community impacts)

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Residential displacements				●
Commercial displacements (#)				●
Agricultural displacements (#)				●
Community or public facilities displacements				●
Commercial displacements (square footage)	●			
Agricultural structure displacements (square footage)	●			
Permanent conversion of important farmland				●
Visual quality effects				●
Consistency with Gilroy General Plan	●	●		●
Noise impacts with noise barrier mitigation			●	

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Increase in 2040 peak travel time on Monterey Road (NB — AM/PM, SB — AM/PM)				●
Permanent road closures			●	●
Amount of mitigation needed to minimize emergency vehicle delays	●	●	●	
EJ proportion of total impacts on local views		●		●
EJ proportion of total residential displacements			●	●
EJ proportion of total business displacements			●	
Amount of mitigation required to address effects on emergency vehicle response times (EJ)	●		●	
EJ proportion of total noise impacts			●	

SUMMARY OF ALTERNATIVES EVALUATION – ENVIRONMENTAL FACTORS

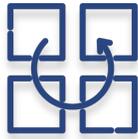


- Best-performing alternative (fewest environmental impacts)

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Waters and wetlands				●
Habitat for listed plant species				●
Habitat for listed wildlife species (California tiger salamander)				●
Wildlife corridor impacts	●	●		●
Conservation areas	●			●
Permanent use of 4(f)/6(f) park resources				●
Permanent adverse effects on NRHP-listed/eligible resources				●
Permanent significant impacts on CEQA-only historic resources			●	●

ALTERNATIVE 4 – Staff-Recommended Preferred Alternative

Conclusions of Technical Analysis



Fewest displacements



Fewest road closures



Fewest impacts on wetlands and habitats



Good access to transit systems and services



Fewest impacts on natural resources



Fewest visual impacts



Marginal increase in system travel time



More noise (if no quiet zones)



Lowest capital cost



Allows for extension of electrified Caltrain service to Gilroy

PREFERRED ALTERNATIVE

COMMUNITY FEEDBACK

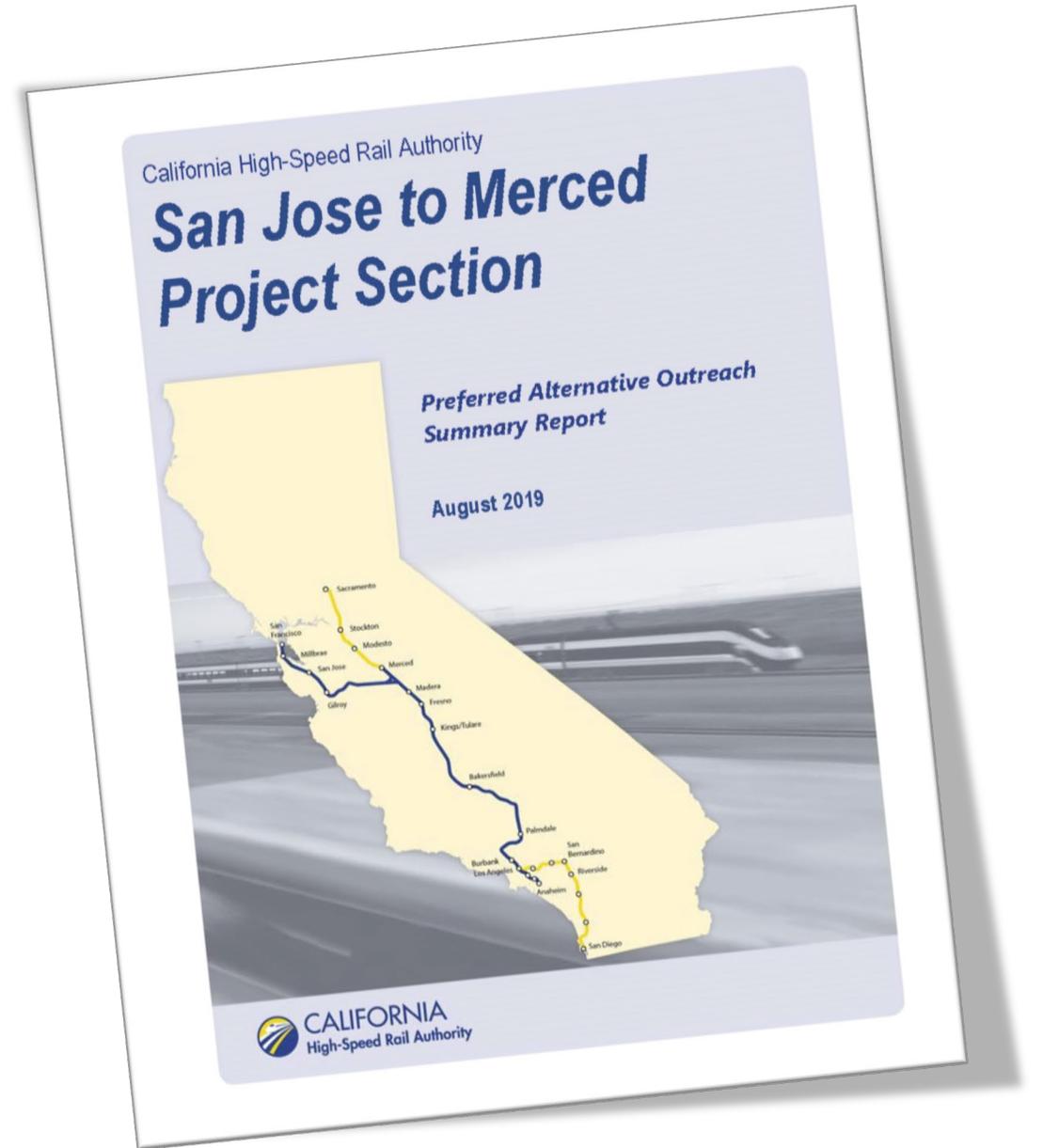


PREFERRED ALTERNATIVE OUTREACH (2019)

- July 8 – San Jose-Morgan Hill TWG
- July 8 – Gilroy-Los Banos TWG
- July 10 – Coyote Valley and Pacheco Pass wildlife stakeholders
- July 10 – Morgan Hill-Gilroy CWG
- July 15 – Grasslands Ecological Area stakeholder group
- July 16 – San Jose CWG
- July 17 – City of Morgan Hill
- July 17 – City/County Staff Coordinating Group
- July 25 – Local Policy Maker Group
- August 15 – San Jose Open House
- August 19 – City of Gilroy
- August 20 – City of San Jose
- August 21 – Los Banos Open House
- August 22 – Gilroy Open House
- September 4 – City of Santa Clara
- September 10 – Santa Clara County Board of Supervisors

KEY THEMES

- Support for Valley-to-Valley and Phase 1 service
- Minimizing residential and commercial displacements a top priority
- Interest in grade separations based on safety, traffic, noise, and emergency vehicle response time considerations
- Noise effects and mitigations in Draft EIR/EIS
- Community cohesion across rail corridor including in Greater Gardner area
- Desire for a station in the Los Banos area
- Value of historic and cultural resources



COMMUNITY WORKING GROUPS

Most important differentiating factors:

- Residential displacements
- Noise impacts
- Visual quality effects
- Emergency vehicle access
- Commercial displacements



Interest in

- » Grade separations
- » City- and community-generated options (e.g., Monterey Corridor trench, elevated Diridon Station)



Questions about

- » How the Preferred Alternative relates to the Diridon Station Integrated Station Concept Plan



Appreciation for

- » Alt. 4's fewer displacements among alternatives
- » Extension of the blended system to Gilroy
- » No viaduct through Monterey Corridor



Concerns about

- » At-grade crossings due to traffic, safety, noise, and emergency vehicle response time considerations
- » Impacts to historic resources
- » Future Caltrain service levels and train volumes through Gardner/Willow Glen

OPEN HOUSES

69% support Alternative 4 fully or with some concerns

Most important differentiating factors:

- Residential displacements
- Noise impacts
- Visual quality effects
- Emergency vehicle access
- Commercial displacements



Interest in

- » Station in Los Banos area
- » Grade separations



Questions about

- » Integration with Caltrain



Appreciation for

- » Valley-to-Valley and Phase 1 service
- » Alt. 4 avoiding impacts to residential properties, historic resources, natural resources, and Frazier Lake Airpark



Concerns about

- » At-grade crossings due to traffic, safety, noise, and emergency vehicle response time considerations
- » Community cohesion and train volumes in Gardner/Willow Glen
- » Impacts to historic and cultural resources
- » Impacts to agricultural land and natural resources
- » Impacts to property values during planning phase

CITIES, COUNTIES, AND OTHER PARTNERS



Interest in

- » Grade separations
- » Pedestrian crossings at IOOF and 10th Street intersections in Gilroy
- » Station configuration and access in San Jose and Gilroy



Questions about

- » Integration with Caltrain, DISC, and other external agencies and processes
- » Construction impacts
- » Negotiations with UPRR



Appreciation for

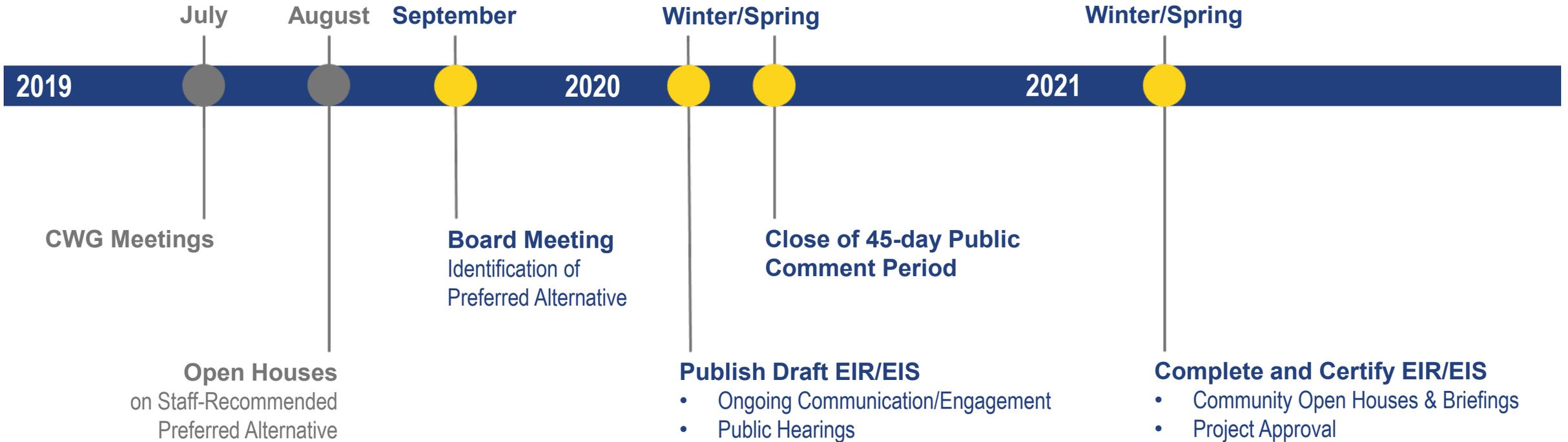
- » Alternative 4 reducing impacts to residential and commercial properties, public facilities, wildlife habitat and conserved lands
- » Alternative 4 advancing state objectives for VMT and greenhouse gas reductions, high-capacity and interconnected transit



Concerns about

- » Grade crossings
- » Noise
- » Safety, including emergency vehicle access
- » Traffic and community cohesion
- » Impacts to communities along the rail corridor
- » Impacts on Grasslands Ecological Area, private duck clubs and state hunting revenues

SAN JOSE TO MERCED TIMELINE



TODAY'S REQUESTED BOARD ACTION

CALIFORNIA HIGH-SPEED RAIL

Concur with the staff recommendation to identify Alternative 4 as the Preferred Alternative in the San Jose to Merced Project Section Draft EIR/EIS

- *NOTE: Identifying the Preferred Alternative does not constitute the adoption or approval of a Preferred Alternative*





Headquarters

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